

## ABSTRACT

A single crystal ingot is cut to an axial direction so as to including the central axis, a sample for measurement including regions  $[V]$ ,  $[Pv]$ ,  $[Pi]$  and  $[I]$  is prepared, and a first sample and second sample are prepared by dividing the sample into two so as to be symmetrical against the central axis. A first transition metal is metal-stained on the surface of the first sample and a second transition metal different from the first transition metal is metal-stained on the surface of the second sample. The first and second samples stained with the metals are thermally treated and the first and second transition metals are diffused into the inside of the samples. Recombination lifetimes in the whole of the first and second samples are respectively measured, and the vertical measurement of the first sample is overlapped on the vertical measurement of the second sample. The boundary between the regions  $[Pi]$  and  $[I]$  and the boundary between the regions  $[V]$  and  $[Pv]$  are respectively specified from the overlapped result.